

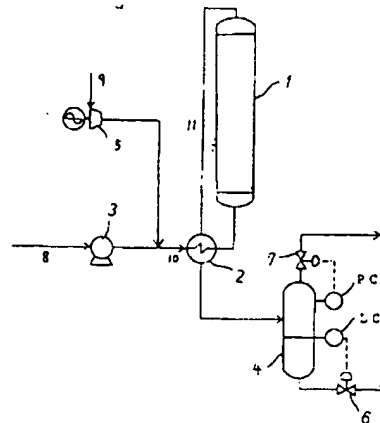
(54) TREATMENT OF WASTE WATER CONTAINING SULFUR-CONTAINING COMPOUND

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(13) 5-76878 (A) (43) 30.3.1993 (19) JP
 (21) Appl. No. 3-241973 (22) 20.9.1991
 (71) NIPPON SHOKUBAI CO LTD (72) KENICHI SHISHIDA(4)
 (51) Int. Cl⁵. C02F1/74, B01J21/06, B01J23/40, B01J23/56, C02F1/74

PURPOSE: To make harmless waste water containing a sulfur-containing compound by a simple treatment process wherein the sulfur-containing compound in the waste water is decomposed by subjecting waste water to wet oxidation using molecular oxygen at 350°C or lower under pressure holding a liquid phase in the presence of a solid catalyst.

CONSTITUTION: Waste water sent from a line 8 is raised to 9kg/cm² in pressure and air supplied from a line 9 is raised in pressure by a compressor 5 to be mixed with the waste water in a ratio of O/TOD=1.2. This gas-liquid mixture is introduced into a heat exchanger 2 through a line 10 to be heated to 150°C and introduced into a wet oxidizing tower 1. The waste water passed through the palladium titanium-zirconia oxide catalyst received in the wet oxidizing tower 1 is subjected to oxidation treatment and cooled by the heat exchanger 2 through a line 11 to be sent to a gas-liquid separator 4. The constant level of the waste water is held in the gas-liquid separator 4 by a liquid level controller LC and constant pressure is held by a pressure controller PC.

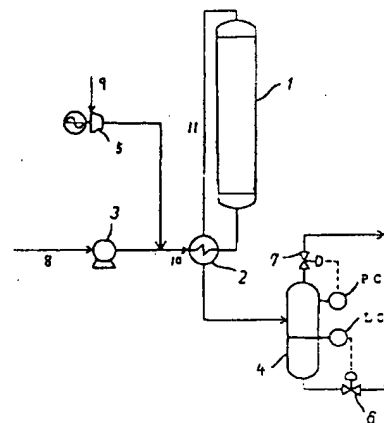


(54) TREATMENT OF WASTE WATER CONTAINING INORGANIC SULFUR-CONTAINING COMPOUND

(11) 5-76879 (A) (43) 30.3.1993 (19) JP
 (21) Appl. No. 3-241974 (22) 20.9.1991
 (71) NIPPON SHOKUBAI CO LTD (72) KENICHI SHISHIDA(4)
 (51) Int. Cl⁵. C02F1/74

PURPOSE: To make highly harmless the sulfur component contained in waste water by a simple process wherein waste water containing a compound containing inorg. sulfur whose apparent oxidation number is below +6 is subjected to wet oxidation using molecular oxygen at 350°C or lower under pressure holding a liquid phase.

CONSTITUTION: The pressure of waste water sent from a line 8 is raised to 9kg/cm² and air supplied from a line 9 is raised in pressure by a compressor 5 to be mixed with the waste water in a ratio of O₂/TOD=1.2. This gas-liquid mixture is heated to 150°C by a heat exchanger 2 through a line 10 and introduced into a wet oxidizing tower 1 to be subjected to oxidation treatment. The treated water is cooled by the heat exchanger 2 through a line 11 to enter a gas-liquid separator 4 and held to a constant level and pressure by a liquid level controller LC and a pressure controller PC. As a result, treated water wherein CODCr is 5200mg/l or less, sulfide sulfur is 600mg/l or less and a thiosulfate ion is 3000mg/l or less is obtained.

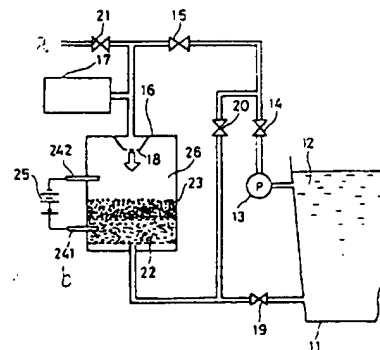


(54) APPARATUS STERILIZING AND PURIFYING WATER

(11) 5-76880 (A) (43) 30.3.1993 (19) JP
 (21) Appl. No. 3-247811 (22) 26.9.1991
 (71) NIPPONDENSO CO LTD (72) KUNIO OKAMOTO
 (51) Int. Cl⁵. C02F1/78, C02F1/50

PURPOSE: To provide the title apparatus developing sterilizing function by low concn. ozone and certainly suppressed the propagation of bacteria in a filter bed and having high safety and efficiency.

CONSTITUTION: The bath water 12 in a bathtub 11 is supplied to a unit tank 16 by a pump 13 through valves 14, 15. In this case, ozone is generated by an ozone generator 11 to be dissolved in the bath water 12. A sterilizing bed 22 composed of an activated carbon fiber and a glass bead bed 23 are set to the interior of the unit tank 16 and the water passed through these beds is returned to the bathtub 11 through a valve 19. Electrodes 241, 242 are set to the unit tank 16 and a DC power supply 25 is connected to the electrodes to apply positive voltage to the sterilizing bed 22.



(19)日本国特許庁(JP)

(12)公開特許公報(A)

(11)特許出願公開番号

特開平5-76880

(43)公開日 平成5年(1993)3月30日

(51)Int.Cl.⁵

C 0 2 F 1/78
1/50

識別記号

庁内整理番号

9045-4D

C 7158-4D

F I

技術表示箇所

審査請求 未請求 請求項の数1(全 4 頁)

(21)出願番号 特願平3-247811

(22)出願日 平成3年(1991)9月26日

(71)出願人 000004260

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(54)【発明の名称】 水用殺菌浄化装置

(57)【要約】

【目的】この発明は、低濃度オゾンによる殺菌機能が發揮されると共に、フィルタ層における菌の増殖が確実に抑制され、安全性に富む高効率な水用殺菌浄化装置を提供することを目的とする。

【構成】浴槽11内の浴槽水12は、ポンプ13によりバルブ14、15を介してユニット槽16に供給される。この場合、オゾン発生装置17でオゾンを発生し、浴槽水にオゾンが溶解される。ユニット槽16内には、活性炭素繊維による殺菌層22およびガラスビーズ層23が積層設定され、これらの層を通過して水はバルブ19を介して浴槽11に戻される。ここで、ユニット槽16に電極241、242を設定し、これら電極に直流電源25を接続することにより、殺菌層22に正の電圧を印加設定する。

